CLAIMS:

1. A lighting unit having a discharge lamp (1), a lamp driver (2), a cooling device (3), at least one device (33; 34) for detecting at least one predetermined operating parameter of the discharge lamp (1), together with a control unit (23) for controlling the lamp driver (2) and/or the cooling device (3) at least during switching on and/or off of the lighting unit in such a way that there is no excursion from a predetermined range of the at least one operating parameter.

2. A lighting unit as claimed in claim 1, wherein the device comprises a sensor (33; 34) for detecting the operating parameter in the form of the temperature of a wall of the discharge vessel (11) of the discharge lamp (1).

3. A lighting unit as claimed in claim 1, wherein one of the operating parameters of the discharge lamp (1) is the lamp current and/or the lamp power.

4. A lighting unit as claimed in claim 1, wherein the range of the at least one operating parameter is so rated that the mechanical stresses in the wall of the discharge vessel (11) of the lamp (1), caused by temperature fluctuations in the discharge lamp (1), are at least substantially reduced.

5. A lighting unit as claimed in claim 1, wherein the control unit (23) is incorporated into the lamp driver (2).

6. A lighting unit as claimed in claim 1, wherein a sensor (33), connected to the control unit (23), is provided for detecting the power of the cooling device (3) in the form of the velocity or the pressure or the volume of a gas stream directed onto the discharge lamp (1), the lamp driver (2) and/or the cooling device (3) being controllable by the control unit (23) as a function of the output signal of the sensor (33).

7. A lighting unit as claimed in claim 1, wherein the control unit (23) comprises a microprocessor unit and a memory for storing at least one switching schedule according to which the lamp driver (2) and/or the cooling device (3) can be controlled.

8. A lighting unit as claimed in claim 7, wherein a switching schedule can be activated by actuation of an off switch of the lighting unit, according to which schedule the lamp driver (2) and the cooling device (3) are adjusted down alternately and/or stepwise.

9. A control unit (23), with which a lamp driver (2) and/or a cooling device (3) for a discharge lamp (1) can be controlled at least during switching on and/or off of the lighting unit, in such a way that there is no excursion from a predeterminable range of at least one operating parameter of the lamp (1) detected by the control unit (23).

10. A lamp driver (2) for operating a discharge lamp (1) and a cooling device (3) for the lamp (1), having at least one device (33, 34) for detecting an operating parameter of a connected lamp (1) together with a control unit (23) for controlling the power of the lamp (1) and/or the cooling power output by the cooling device (3) at least during switching on and/or off of the lighting unit, in such a manner that there is no excursion from a predeterminable range of the at least one operating parameter.

11. A projection system having a lighting unit as claimed in claim 1.